



Spectral Gamma-Ray Borehole Log Data Report

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Borehole

40-08-08

Log Event A

Borehole Information

Farm : <u>S</u>	Tank : <u>S-108</u>	Site Number : <u>299-W23-202</u>
N-Coord : <u>35,990</u>	W-Coord : <u>75,799</u>	TOC Elevation : <u>663.00</u>
Water Level, ft : <u>97.80</u>	Date Drilled : <u>2/28/1976</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

Borehole Notes:

This borehole was drilled in February 1976 and completed to a depth of 100 ft with 6-in.-diameter casing. An 8-in. starter casing was installed to a depth of 20 ft; the starter casing was removed at the completion of drilling operations. Twelve gal of grout was added between 100 and 105 ft, 78 gal of grout was added to the annulus space between the 8-in. starter casing and the 6-in. borehole casing.

The casing thickness of the borehole is assumed to be 0.280 in., on the basis of published thickness for schedule-40, 6-in. casing.

Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>05/1996</u>	Calibration Reference : <u>GJPO-HAN-5</u>	Logging Procedure : <u>P-GJPO-1783</u>

Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>06/24/1996</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>97.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>16.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>
Log Run Number : <u>2</u>	Log Run Date : <u>06/25/1996</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>17.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Borehole

40-08-08

Log Event A

Analysis Information

Analyst : S.D. Barry

Data Processing Reference : P-GJPO-1787

Analysis Date : 04/18/1997

Analysis Notes :

This borehole was logged in two log runs using a centralizer. The pre- and post-survey field verification spectra for all three log runs met the acceptance criteria established for peak shape and system efficiency. The energy and peak-shape calibration from the appropriate field verification spectra that best matched the logging data were used to establish the channel-to-energy parameters used in processing the spectra acquired during the two log runs.

Casing correction factors for a 0.280-in.-thick casing were applied during the analysis.

Cs-137 was the only man-made radionuclide encountered in this borehole. Cs-137 contamination was detected only from the ground surface to a depth of 1 ft.

The K-40 log plot shows the concentration values increase at about 19 ft, 42 ft, and at about 60 ft. The logs plots of U-238 and Th-232 also show a slight increase in concentrations at a depth of about 60 ft.

Details concerning the interpretation of data for this borehole are presented in the Tank Summary Data Report for tank S-108.

Log Plot Notes:

Separate log plots show the man-made and the naturally occurring radionuclides. The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes the man-made and natural radionuclides, the total gamma derived from the spectral data, and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the MDL. The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.